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SECRETARY OF THE AIR FORCE**

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Flying Operations

**C-5 OPERATIONS CONFIGURATION
AND MISSION PLANNING**

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SUMMARY OF CHANGES

This revision removes personnel and heavy equipment airdrop configurations (ADC-1 and ADPC-1), cargo compartment seat kit configuration (P-1), updates emergency and extra equipment items (Table 2.1 and Table 2.2), adds the Automated Form F user's guide and deletes the HP200 Information Worksheet references (Attachment 2). This revision also changes the C-5

load planning Zero Fuel Weight CG to 38% MAC (paragraph 4.2.1.), and removes several pieces of unused equipment (Table 4.1), as part of a MAF-wide aircraft weight savings initiative.

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Chapter 1

POLICY

1.1. General. This instruction establishes basic configurations, standard equipment, and equipment location aboard the C-5. Included are weight and balance, standard weight and moment data for use in completing DD Form 365-4, **Weight and Balance Clearance Form F-Transport/Tactical**.

1.2. Airplane Coding. This instruction provides coverage for C-5A, C-5B, and C-5A Space Canister Modified (SCM) airplanes. C-5A airplanes are designated by the letter **{A}** C-5B by the letter **{B}**, and C-5A SCM by the letter **{S}**. Portions of this instruction are designated by the use of these symbols to indicate applicability to C-5A, C-5B, or C-5A SCM airplanes. Items not designated as applicable to either **{A}**, **{B}**, or **{S}** airplanes are applicable to all three series.

1.3. Responsibility. Air Force units performing services on the C-5 airplane, e.g. terminal services, support equipment branch, and life support are responsible for configuring the aircraft with the equipment listed in this instruction or as outlined in mission directives. This includes stowage or installation of the equipment according to the configurations in this instruction and applicable installation directives (i.e. Technical Orders (T.O.) 1C-5A-2-2, 1C-5A-21, and 1C-5A-9). During preflight, aircrew personnel will ensure that required mission equipment has been provided and properly serviced, installed, or stowed.

1.4. Standard Configuration Codes. Use the letter codes in **Table 1.1** when referring to C-5 configurations. The number that identifies the configuration capability will follow the letter code. Each configuration code will be indicated in the mission directive.

1.5. Deviations and Waivers. Configurations in this instruction may require deviations for specific mission requirements. Each mission directive will identify the basic configuration and any deviations. For example, a Phoenix Banner mission carrying presidential helicopters may require an additional winch. Deviations may require changes to weight and balance calculations.

1.6. Weight and Balance. To standardize equipment quantities and locations, items shown in **Table 2.1** will be included in the basic weight of the aircraft and remain on the aircraft except for maintenance and inspection. Equipment in **Table 2.2** will be pre-positioned for all local training and operational missions to meet standard configurations listed in **Table 3.1** and will be entered in reference 5, 6, or 7 of DD Form 365-4. Note: Asterisk items in Table 3.1 are not required for local training missions.

1.7. Changes and Supplements See AFI 11-2C-5V3, *C-5 Operations Procedures*, Chapter 1.

1.8. References See AFI 11-2C-5V3 and the following:

Table 1.1. Standard Configuration Codes

CONFIGURATION CODES	MISSION
C	Cargo
CP	Cargo and Passengers

CHAPTER 2

CONSOLIDATED EQUIPMENT TABLES

2.1. Scope All airplanes will be configured with the equipment listed in **Table 2.1**. This equipment will be included in the aircraft basic weight. Items listed in **Table 2.2** are added only as necessary to attain standard configurations listed in **Table 3.1** and/or comply with mission directives.

2.2. Forms AFVA 11-225, **C-5 Passenger Emergency Information Card**, informs passengers of the proper location and use of emergency equipment and exits (see AFI 11-202V3, *General Flight Rules*, for passenger briefing card requirements).

2.3. Aircraft Life Sustaining Equipment (ALSE) Configure aircraft in accordance with T.O. 1C-5A-1, *Flight Manual, USAF Series, C-5A and C-5B Airplanes*. Aircraft commanders (AC) may request that additional equipment be positioned aboard aircraft to accommodate aircrew and passenger increases, as required. However, units will ensure they do not exceed their total equipment authorizations per applicable allowance standards (AS).

Table 2.1. Standard Equipment.

Item	Equipment	Quantity	Location
1	Aldis lamp/filters	1	Copilot's side console
2	Aviation (AV) fuels identiplate	1	Holder aft of navigator station
3	Cargo winch w/clevis	1	Winch compartment RBL 48 FS 470/2020. Winch computed in aft compartment.
4	Cargo winch remote control grip assembly	1	Left side cargo compartment, FS 1215
5	Cord, interphone	1 (25-ft) 2 (50-ft) 1 (175-ft)	As required
6	Crash axe {A}{B}	3	Located according to T.O. 1C-5A-1 or 1C-5A-1-2
	{S}	2	
7	Cryogenic vent nozzles	3	{A}{B} Loose equipment stowage container left side of cargo compartment FS 1774 and {S} airplanes FS 684
8	Detent locking tee (pallet lock)	8	Container left side of cargo compartment FS 1774 {S} airplanes FS 684
9	Protective Breathing Equipment (PBE) (see note 8) {A}{B}	8	Located according to T.O. 1C-5A-1 or 1C-5A-1-2
	{S}	6	
10	Emergency exit light {A}{B}	12	Located according to T.O. 1C-5A-1 or 1C-5A-1-2
	{S}	7	
11	Escape reel	24	Located according to T.O. 1C-5A-1

Table 2.1. Standard Equipment (continued).

Item	Equipment	Quantity	Location
12	Escape rope {A}{B}	8	Located according to T.O. 1C-5A-1 or 1C-5A-1-2
	{S}	3	
13	Escape slide {A}{B}	5	Located according to T.O. 1C-5A-1 or 1C-5A-1-2
	{S}	1	
14	Fan holder	4	Stowed as loose equipment in the cargo compartment
	Fan stop	1	
15	Fire extinguisher {A}	15	Located according to T.O. 1C-5A-1 or 1C-5A-1-2 NOTE: Two additional 1-gallon HALON 1211 extinguishers are installed in cargo compartment, one on each side just fwd of the center wing area on airplanes not equipped with FE 1301.
	{B}	17	
	{S}	10	
16	First aid kit {A}{B}	22	Located according to T.O. 1C-5A-1 or 1C-5A-1-2
	{S}	7	
17	Gloves, aramid	1 pr	Stowage box in fwd bunk room
18	Ground personnel restraint kit	1	Stowage box in fwd bunk room
19	Kneeling collar	4	Loose equipment stowage container left side of cargo compartment, FS 684
20	Kneeling pad extend pin	1	Loose equipment stowage container left side of cargo compartment, FS 684
21	Ladder, rope (stowed)	1	Stowed under floor of courier compartment FS 962
22	Ladder, utility	1	Stowed as loose equipment in the cargo compartment
23	Oil, engine MIL-L-7808	72-quart	Stowed as loose equipment in a suitable container in the cargo compartment
24	Oil, hydraulic MIL-H-83282	48-quart	Stowed as loose equipment in a suitable container in the cargo compartment
25	Oven		
	{A}{B}	2	One each located in the relief crew and troop compartment galleys
	{S}	1	Located in the relief crew galley
26	Oxygen bottle {A}{B}	16	Located according to T.O. 1C-5A-1 or 1C-5A-1-2
	{S}	12	
27	Pallet stop	4	{A}{B} Loose equipment stowage container left and right FS 1774 and {S} airplanes FS 684
28	Pin, landing gear	5	Loose equipment stowage container left side of cargo compartment FS 684

Table 2.1. Standard Equipment (continued).

Item	Equipment	Quantity	Location
29	Pressure door upper hinge lock block assembly w/F-valve safety guard	2	{A}{B} Loose equipment stowage container right side of cargo compartment FS 1774 and {S} airplanes FS 684
30	Protective covers	33	Located according to T.O. 1C-5A-1
31	Refrigerator		
	{A}{B}{S}	1	Located in the relief crew galley
	{A}{B}	1	Located in the troop compartment galley
32	Seat, student or instructor	1	Courier compartment baggage area
33	Snatch block assembly	3	Right side of cargo compartment, FS 594 /1734 and left side FS 614
34	Strut limiter	1	Loose equipment stowage container left side of cargo compartment FS 684
35	Table, relief crew	1	Installed in relief crew compartment
36	Technical publications	1 set	Stowed according to T.O. 1C-5A-5-1 or 1C-5A-1
37	Tie-down equipment		
	MB-1 chains and devices (10,000-lb capacity)	75	Located according to T.O. 1C-5A-9, 1C-5A-9-1, 1C-5A-5-1, or 1C-5A-5-1-1
	MB-2 chains and devices (25,000-lb capacity)	75	
	CGU-1/B Straps (5,000-lb capacity)	50	
38	Wheel chocks	4	Stowed as loose equipment in the cargo compartment

Table 2.2. Required Equipment

Item	Equipment	Quantity	Location
1	Crew comfort items:		
	Blankets, large	12	Relief crew bunk area
	Blankets, small	8	Courier compartment baggage area
	Pillows, large w/case	6	Relief crew bunk area
	Pillows, small w/case	8	Courier compartment baggage area
	Hot cup	1	Crew galley
	Coffee pot w/hot plate	1	Crew galley
2	Water container (5-gal)	1	Relief crew baggage area
3	Passenger comfort items		
	Blankets, small {A}{B}	75	Troop compartment
	Pillows, small {A}{B}	75	Troop compartment
	Hot cup {A}{B}	1	Troop galley
	Coffee pot {A}{B}	1	Troop galley
	w/hot plate	1	
	Water container (5-gal) {A}{B}	2	Troop galley

	Passenger service kit {A}{B}	1	Troop compartment
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Table 2.2. Required Equipment (continued)

Item	Equipment	Quantity	Location
4	Emergency Passenger Oxygen System (EPOS)(see notes 2, 8)		
	{A}{B}{S}	15	Relief Crew and Courier Compartment
	{A}{B}	73	Troop Compartment
5	Life preservers - crew and passenger:		
	A/C (adult or child)(see notes 4, 8) {A}{B}{S}	20	Flight deck
	{A}{B}	80	Troop compartment
	LPU-6/P (infant cot) (see note 8) {A}{B}	7	Troop compartment
	Life preservers, crew LPU-10/P (see notes 5, 7, 8)	As Required	As Required
6	Mask, 358-series w/goggles (see notes 1, 8)		
	{A}{B}{S}	11	Flight deck
	{A}{B}	6	Cargo compartment
	{A}{B}	4	Troop compartment
7	Mask, AWACS (MBU-12P or -5/P)(see note 8) {A}{B}{S}	6	Flight deck
8	Mask, Passenger (PAX) Oxygen (see note 8)		
	{A}{B}{S}	18	Flight deck
	{A}{B}	83	Troop compartment
9	Restraint harness, aircrew, in-flight (PCU-17/P) w/safety lanyard (HBU-6/P)(18'6")(see note 8) {A}{B}{S}	3	Stowage box in fwd bunk room
10	Parachute, BA-22 (see note 3)	As Required	As Required
11	Life raft, 25-Person (see notes 7, 8) {A}{B}	4	Located according to T.O. 1C-5A-1 or 1C-5A-1-2
	{S}	1	
12	Vest, Survival (see note 6)	As Required	As Required
13	Kit, Minimum Survival (MSK)	1	PDM Input Only
14	Emergency Equipment Demonstration Bag(see note 8)		
	{A}{B} {S}	1	Courier Compartment
	{A}{B}	1	Troop Compartment

Table 2.2. Required Equipment (continued).

Item	Equipment	Quantity	Location
15	Protective clothing kit (see note 8)	2	Relief crew baggage compartment and troop compartment closet <i>NOTE:</i> On {S} airplanes kits will be stowed in relief crew baggage compartment
16	C-5 Galaxy Passenger Emergency Information Card AFVA 11-225	10	Stowed in seat pouch in courier compartment
	AFVA 11-225 {A}{B}	75	Stowed in seat pouch in troop compartment
17	Shoring Kit, Plywood:		
	12" X 12" X 1/2"	8	Stowed as loose equipment in the cargo compartment
	12" X 12" X 3/4"	8	

NOTES:

1. Part number (P/N) 358-1506 series oxygen mask with goggles attached is the preferred smoke and fume protection for aircrew personnel. Firefighters smoke masks may be used until 358-series oxygen masks and goggles are available.
2. EPOS is the preferred system for passenger smoke and fume protection. As a minimum, each aircraft will have one EPOS per passenger. Preposition additional EPOS for increased scheduled PAX loads.
3. Add parachutes as required by other configuration publications.
4. The A/C is the preferred LPU for passengers. As a minimum, each aircraft will have one LPU for each passenger.
5. The LPU-10/P LPU is required to integrate with ALSE and is designed for use by aircrew personnel. A/C LPUs are not compatible for use with parachutes and survival vests and must not be used as a substitute for this LPU.
6. Survival Vests are required when parachutes are prepositioned aboard aircraft, any time aircrew is flying a combat mission and optional for any other circumstances. Survival vests provide crewmembers the necessary survival items while waiting for rescue or return to duty. Quantities will match number of parachutes aboard aircraft.
7. Aircraft flying over water to Programmed Depot Maintenance (PDM) will load one 25-person life raft and five LPU-10/Ps to support crewmembers as required.
8. For all aircraft transfers, position ALSE on each aircraft IAW permanent transfer configuration. Units gaining transferred aircraft, to include PDM aircraft, will contact the losing organization's AFE section and initiate transfer of required aircraft-installed ALSE and inspection records. Gaining AFE organization will conduct an aircraft acceptance inspection and forward a copy of discrepancies, to include any equipment shortages, to their respective MAJCOM IAW T.O. 00-20-1. Do not transfer aircraft with less than the required equipment. The losing organization will make up any necessary shortages from on-hand assets to ensure transferring aircraft has required equipment installed.

Chapter 3

CONFIGURATION AND REQUIRED EQUIPMENT WEIGHT AND BALANCE DATA

3.1. Scope This chapter contains basic cargo compartment configuration and weight, location, and moment data for associated required equipment.

3.2. General Deviations to the basic configurations are authorized only to meet specific mission requirements.

3.3. Legend of Configurations:

3.3.1. {A}{B} CP-1. This configuration offers 36 pallet positions and seats for 73 passengers in the troop compartment. All rollers will be up in this configuration.

3.3.2. {S} C-1. This configuration offers 36 pallet positions. All rollers will be up in this configuration.

3.3.3. {A}{B} CP-2. This configuration offers a clean cargo compartment floor for floor-loaded cargo and seats for 73 passengers in the troop compartment. All rollers will be down in this configuration.

3.3.4. {S} C-2. This configuration offers a clean cargo compartment floor for floor-loaded cargo. All rollers will be down in this configuration.

3.3.5. {A}{B} CP-3. This configuration offers a mixed combination of palletized cargo and floor-loaded cargo in the cargo compartment and seats for 73 passengers in the troop compartment. Rollers will be positioned as the cargo dictates.

3.3.6. {S} C-3. This configuration offers a mixed combination of palletized cargo and floor-loaded cargo. Rollers will be positioned as the cargo dictates.

Figure 3.1. {A}{B} CP-1, CP-2, and CP-3 Standard Configuration (All Channel Missions)--Quantities. *Asterisk items are not required for local training missions.

EQUIPMENT	STATIONS	FLT STA	TP COMP	CGO COMP	TOTAL	WEIGHT	MOM
Reference 5, DD Form 365-4 (Steward's Equipment)							
Blankets, large	620	*12	--	--	12	42	0.3
Blankets, small	in seats	*8	*75	--	83	83	1.3
Pillows, large	620	*6	--	--	6	12	0.1
Pillows, small	in seats	*8	*75	--	83	42	0.7
Hot cup	840/2075	1	*1	--	2	6	--
Coffee pot w/hot plate	840/2075	1	*1	--	2	4	--
Passenger service kit	2080	--	*1	--	1	10	0.2
Water container, 5-gal (full)	840/2080	1	*2	--	3	150	2.4
Expendable supplies	825/2080	1	*1	--	2	20	0.3
AFVA 11-225	in seats	*10	*75	--	85	5	--
				TOTAL		374	5.3

Figure 3.1. {A}{B} CP-1, CP-2, and CP-3 Standard Configuration (All Channel Missions)-- Quantities (continued). *Asterisk items are not required for local training missions.

EQUIPMENT	STATIONS	FLT STA	TP COMP	CGO COMP	TOTAL	WEIGHT	MOM
Reference 6, DD Form 365-4 (Emergency Equipment)							
Protective clothing kit	825/2080	1	1	--	2	70	1.0
Life vest LPU 6/P	2080	--	*7	--	7	28	0.6
Life vest A/C	490/1725	20	80	--	100	151	2.3
EPOS	490/1725	15	73	--	88	176	2.7
Demonstration bag	490/2080	1	1	--	2	10	0.0
				TOTAL		435	6.6
Reference 7, DD Form 365-4 (Extra Equipment)							
Shoring kit plywood	443	--	--	1	1	28	0.1
				TOTAL		28	0.1
Additional Extra Equipment (As Required by Mission Directives)							
Flares, MJU 7	324	--	--	--	60	48	0.2
Flares, MJU 10	1669/1731	--	--	--	48	120	2.0
Winch (C-5), electric	470	--	--	1	1	300	1.4
Winch (C-5), hydraulic	470	--	--	1	1	329	1.5

Figure 3.2. {S} C-1, C-2, and C-3 Standard Configuration (All Channel Missions)-- Quantities. *Asterisk items are not required for local training missions.

EQUIPMENT	STATIONS	FLT STA	TP COMP	CGO COMP	TOTAL	WEIGHT	MOM
Reference 5, DD Form 365-4 (Steward's Equipment)							
Blankets, large	620	*12	--	--	12	42	0.3
Blankets, small	in seats	*8	--	--	8	8	--
Pillows, large	620	*6	--	--	6	12	0.1
Pillows, small	in seats	*8	--	--	8	4	--
Hot cup	840	1	--	--	1	3	--
Coffee pot w/hot plate	840	1	--	--	1	2	--

**Figure 3.2. {S} C-1, C-2, and C-3 Standard Configuration (All Channel Missions)--
Quantities (continued). *Asterisk items are not required for local training missions.**

EQUIPMENT	STATIONS	FLT STA	TP COMP	CGO COMP	TOTAL	WEIGHT	MOM
Passenger service kit	840	*1	--	--	1	10	--
Water container, 5-gal (full)	840	1	--	--	1	50	0.4
Expendable supplies	825	1	--	--	2	10	0.1
AFVA 11-225	in seats	*10	--	--	10	--	--
				TOTAL		141	0.9
Reference 6, DD Form 365-4 (Emergency Equipment)							
Protective clothing kit	825	1	1	--	2	70	1.0
Life vest A/C	490	20	--	--	20	30	0.1
EPOS	490	15	--	--	15	30	0.1
Demonstration bag	490	1	--	--	1	5	0.0
				TOTAL		135	1.2
Reference 7, DD Form 365-4 (Extra Equipment)							
Shoring kit plywood	443	--	--	1	1	28	0.1
				TOTAL		28	0.1
Additional Extra Equipment (As Required by Mission Directives)							
Winch (C-5) electric	470	--	--	*1	1	300	1.4

Chapter 4

LOAD PLANNING

4.1. Scope This chapter contains information to assist personnel in load planning.

4.2. General Table 4.1 contains standard weight information. The following factors must be considered during load planning:

4.2.1. The cargo load must be planned so that the center of gravity of the loaded airplane shall be within specified forward and aft limits. Consideration must also be given to offload sequence, airplane limitations, and emergency jettisoning. For fuel efficiency, plan for a zero fuel center of gravity of approximately 38 percent of MAC.

4.2.2. Pallets loaded in pallet positions 1, 2, 35, and 36 (forward and aft ramps) shall have a 14-inch access, which shall extend from the outboard edge of the pallet to the vertical stacking line of the cargo (T.O. 1C-5A-9).

4.2.3. No lateral overhang permitted for pallets loaded into the aircraft rail system. Ensure the maximum width of 104 inches of usable area of the pallet is not exceeded (T.O. 1C-5A-9).

4.2.4. The maximum height of cargo for pallet positions 35 and 36 (aft ramp) shall not exceed 70 inches measured on the aft side of the pallet (T.O. 1C-5A-9).

4.2.5. The weight limit on the forward or aft ramp is limited to 7,500 pounds-per-pallet position (T.O. 1C-5A-9).

4.2.6. {S} AFT cargo door configuration prohibits left or right straight in loading of palletized cargo into the logistics rail system (T.O. 1C-5A-9-1).

4.2.7. When 20 or more passengers or troops are planned, a pallet position shall be left open to accommodate the palletized baggage.

4.2.8. Do not place cargo in a position that shall restrict the use of the flight deck or troop compartment ladders.

4.3. Planning for the Loading and Placement of Hazardous Cargo All classes of hazardous materials listed as acceptable for air transportation may be transported on the C-5 airplane. Hazardous cargo that is considered jettisonable shall not be positioned forward of non-jettisonable cargo, i.e. vehicles, helicopters, pallet trains, etc., except when weight and location will permit jettisoning by hand. Hazardous jettisonable cargo must be readily accessible and positioned for emergency jettison.

4.4. Miscellaneous Data Table 4.1 will aid in configuration planning and balance.

4.5. {A}{B} Personnel Limitation with One Lavatory Inoperative The Personnel Limitation Chart (**Figure 4.1.**) reflects the number of passengers or troops that one troop compartment lavatory can accommodate and must be considered when determining the number of personnel that can be airlifted with one inoperative lavatory.

Table 4.1. Standard Weight Information.

Item	Pounds
Aircrew restraint harness, in-flight	8.3
Armor, Body	8.0
Blankets, large	3.5
Blankets, small	1
Buffet/lavatory unit (unserviced)	3,106
Buffet/lavatory unit (serviced)	4,697
Chain, MB-1	7
Chain, MB-2	20
Coffee pot	2
Crew (each)	200
Crew baggage (each)	50
Device, MB-1	3.5
Device, MB-2	6
Duffle bag	100
Emergency Passenger Oxygen System (EPOS)	2
Escape, slide/assembly	
{A}{B} No. 3R and 3L exit	71.5 each
{A}{B} No. 4 and 6 exit	71 each
No. 5 exit	70
Flare, MJU 7	0.8
Flare, MJU 10	2.5
Fire extinguisher, portable (1 qt)	9
Fire extinguisher, portable (1 gal)	68
Hot cup	3
Life raft, 25-member, No. 2 exit	151
{A}{B} No. 3R, 4, and 6 exits	136
Life vest LPU 10/P (aircrew)	4
Life vest A/C (adult/child)	1.5
Life vest LPU-6/P (infant cot)	4
Nets, pallet	65
Oil, engine, MIL-L-7808 (one case)	45
Oil, hydraulic, MIL-H-83282 (one case)	42
Oxygen bottle, portable	6
Oxygen mask (all quick-don series)	1
Oven, galley	45
Pallet (HCU-6/E)	290
Parachute, back (aircrew)	28
Passenger service kit	10

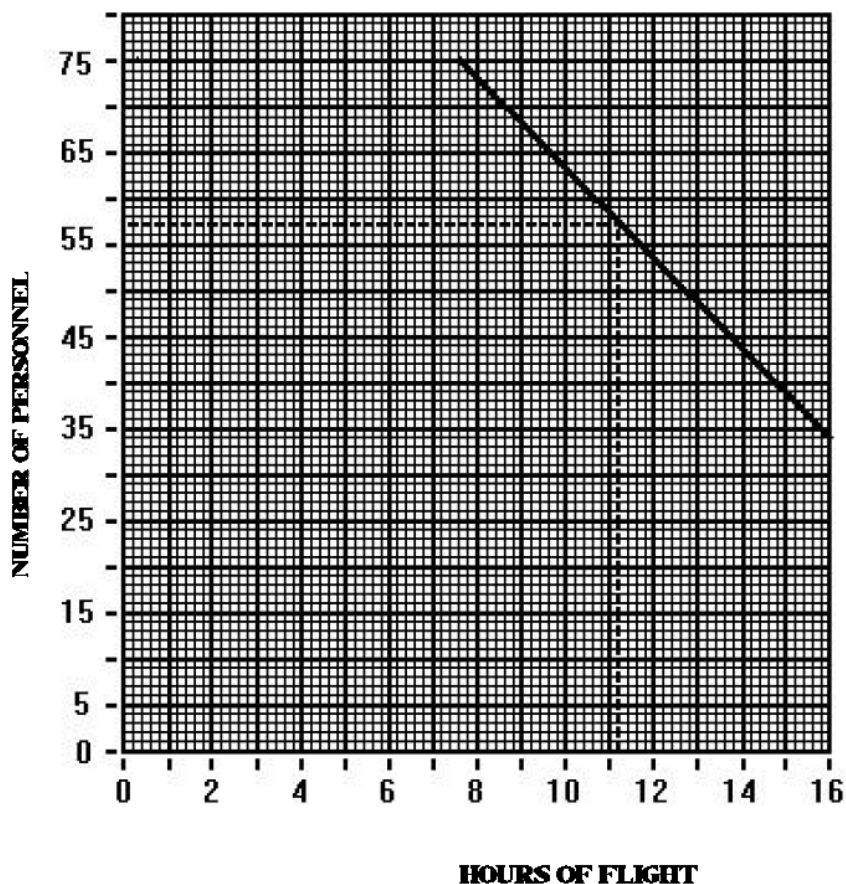
Table 4.1. Standard Weight Information (continued).

Passengers (each)	175
Passenger baggage (each)	70
Pillows, small	0.5
Pillow, large	2
Protective Breathing Equipment (PBE) w/storage case	5
Protective clothing kit	35
Refrigerator, relief crew and troop compartment	227
Ruck sack (training)	40
Ruck sack (combat)	80
Sheets	5
Shoring kit, plywood	28
Shoring	
Plywood 1/2" x 4' x 8'	43
3/4" x 4' x 8'	64
Planking 2" x 12" x 12'	72
Straps, CGU 1/B	4
Troops (each) w/web gear and weapon	210
Troops, ground w/ruck sack, web gear, and weapon (combat)	300
Troops, ground w/ruck sack, web gear and weapon (training)	250
Troops, ground w/ruck sack, duffle bag, web gear, and weapon (combat)	400
Troops, ground w/ruck sack, duffle bag, web gear, and weapon (training)	350
Vest, Aircrew Body Armor	8
Vest, Survival	10
Water container, 5-gal (full)	50
Wheel chock (20-inch)	14
Winch (heavy duty portable)	792
Winch (C-5), electric	300
Winch (C-5), hydraulic	329

Figure 4.1. C-5 Personnel Limitation Chart (when one of the two troop compartment lavatory compartments is inoperative) The chart reflects the amount of time that may be flown depending on the total number of personnel to be transported.

NOTE:

The operative lavatory compartment must be serviced at the station requiring maximum passenger airlift.



EXAMPLE: How many passengers may be airlifted on an 11.2-hour flight? **SOLUTION:** Enter the graph on the horizontal scale of 11.2 hours. Project a line vertically until it intersects the sloping line and project a line horizontally to the left. At this point is the maximum figure of 57.

NOTES:

1. Two loadmasters must be subtracted from total number determined by chart.
2. Consideration should be given to infants and small children when figuring total personnel aboard.

4.7. Prescribed Forms:

No forms are prescribed by this publication.

4.8. Adopted Forms:

AF IMT 847, *Recommendation for Change of Publication*, DD Form 365-3, *Chart C, Basic Weight and Balance Record*, DD Form 365-4, *Weight and Balance Clearance Form-F*, AFVA 11-225, *C-5 Passenger Emergency Information Card*.

DANIEL J. DARNELL, Lt General, USAF
DCS, Operations, Plans & Requirements

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 11-2C-5V3, *C-5 Operations Procedures*, 7 December 2005

AFI 11-202 V3, *General Flight Rules*, 5 April 2006

AFMAN 33-363, *Management of Records*, 1 Mar 2008

AFPD 11-2, *Flight Rules and Procedures*, 14 Jan 2005

T.O. 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*, 30 April 2003

T.O. 1C-5A-1, *Flight Manual*, 1 July 2007

T.O. 1C-5A-1-2, *Partial Flight Manual, C-5A (SCM) Airplanes*, 1 July 2007

T.O. 1C-5A-1-4, *Partial Flight Manual, Supplemental, C-5A and C-5B (AMP) Airplanes*, 1 July 2007

T.O. 1C-5A-2-1, *Ground Handling and Servicing*, 15 June 2007

T.O. 1C-5A-2-2, *Airframe*, 15 June 2007

T.O. 1C-5A-5-1, *Basic Weight Checklist*, 15 June 2007

T.O. 1C-5A-5-1-1, *Partial Basic Weight Checklist, C-5A (SCM) Airplanes*, 15 June 2007

T.O. 1C-5A-5-2, *Loading Data Manual*, 15 June 2007

T.O. 1C-5A-5-2-1, *Partial Loading Data Manual, C-5A (SCM) Airplanes*, 15 June 2007

T.O. 1C-5A-9, *Loading Instructions Manual*, 15 June 2007

T.O. 1C-5A-9-1, *Partial Loading Instructions Manual, C-5A (SCM) Airplanes*, 15 June 2007

T.O. 1C-5A-21, *Equipment Inventory List*, 15 June 2007

T.O. 1-1B-40, *Weight and Balance Data*, 1 March 2005

T.O. 1-1B-50, *Basic Technical Order for USAF Aircraft Weight and Balance*, 1 March 2005

Abbreviations and Acronyms

ACL—Allowable Cabin Load

AFF—Automated Form-F

AFE—Aircrew Flight Equipment

ALSE—Aircrew Life Sustaining Equipment

ANG—Air National Guard

ARMS—Aviation resource Management Systems

BL—Butt line

CG—Center of Gravity
CGFA—Center of gravity From Front Axle
CGFE—Center of Gravity From Front End
EPOS—Emergency Passenger Oxygen System
EWP—Emergency Wartime Planning
FS—Fuselage Station
GW—Gross Weight
IAW—In Accordance With
KPH—Kilo Pascal
LEMAC—Leading Edge Mean Aerodynamic Chord
LHS—Left hand Side
LPU—Life Preserver Unit
MAC—Mean Aerodynamic Chord
MAF—Mobility Air Forces
MSL—Multifab Survival Limited
PAX—Passengers
PBE—Protective Breathing Equipment
PSI—Pounds Per Square Inch
PDM—Programmed Depot Maintenance
RHS—Right Hand Side
SCM—Space Canister Modified
ZFW—Zero Fuel Weight
ZFWCG—Zero Fuel Weight Center of Gravity

Attachment 2**INSTRUCTIONS DD FORM 365-4 (WEIGHT AND BALANCE CLEARANCE FORM F)**

A2.1. DD Form 365-4 Heading Enter date, airplane type, departure station, home station of airplane, mission number, serial number, destination station (use station nomenclature, not symbols), and aircraft commander's rank and last name.

A2.2. Limitations Enter the appropriate weight and center of gravity (CG) limits for the planned mission using the following criteria: The maximum gross weight (GW), zero fuel weight (ZFW), and CG limits specified in the flight manual and loading data manual shall not be exceeded.

A2.2.1. Allowable Takeoff GW The maximum takeoff GW is 769,000 pounds (840,000 pounds during emergency war plan (EWP)). Allowable takeoff GW may be further restricted by critical field length, obstacle clearance, rate of climb, or weight bearing capacity. Verify the allowable takeoff GW with the flight engineer.

A2.2.2. Allowable Landing GW The maximum landing weight is 769,000 pounds (840,000 during EWP). When mission requirements dictate a weight above 635,850 pounds, consult TO 1C-5A-1, Section V, Sink Rate Limitations, and document the associated allowable sink speed in the remarks section.

A2.2.3. Allowable ZFW The maximum ZFW is 665,000 pounds unless nonstandard fuel sequence procedures are used or aircraft is structurally restricted. Verify the allowable ZFW with the flight engineer.

A2.3. Reference 1 Enter basic weight and moment from certified copy of DD Form 365-3 (Chart C) in the airplane weight and balance handbook.

A2.4. Reference 2 Leave blank.

A2.5. Reference 3 Enter crew number and location. Use T.O. 1C-5A-5-2, table 2-1, or enter by compartment centroid. Use fuselage station (FS) 440 for compartment "A"; FS 730 for compartment "B"; FS 917 for compartment "C"; and FS 2031 for compartment "E".

A2.6. Reference 4 Enter crew baggage at 50 pounds each using FS 500. Additional weight should be added per crewmember when mobility bags are carried.

A2.7. Reference 5, 6 and 7 (see **Chapter 3**) Enter weight and moment. Also, indicate configuration used.

A2.8. Reference 8 Enter liquid nitrogen weight and moment. Use FS 1418 for liquid nitrogen moment computations.

A2.9. Reference 9 The total of references 1 through 8.

A2.10. Reference 10 Enter takeoff fuel (ramp fuel minus 3,000 pounds for taxi and takeoff roll). Fuel moments may be computed using the interpolation method or using 14 moments for each 1,000 pounds of fuel over the standard fuel figures in T.O. 1C-5A-5-2.

A2.11. Reference 11 Leave blank.

A2.12. Reference 12 The total of references 9 and 10.

A2.13. Reference 13 Distribution of Allowable Load:

A2.13.1. Enter 463L pallets with cargo by pallet position or fuselage station.

A2.13.2. Enter vehicles, rolling stock, pallet trains with oversize cargo by CG location.

A2.13.3. Enter passengers or troops in the appropriate compartments, see T.O. 1C-5A-5-2, page 2-10, or enter by compartment centroid (Use FS 1675 for compartment "E".)

A2.14. Reference 14 Enter the ZFW, zero fuel moment, and zero fuel percent of MAC. If the ZFW CG falls outside the ZFW envelope (loading data manual), the cargo load preplan must be adjusted.

A2.15. Reference 15 Subtotals; enter totals from reference 13.

A2.16. Reference 16 Enter the total of references 12 and 15.

A2.17. Reference 17 Enter the takeoff CG in percent of MAC.

A2.18. Reference 18 Enter corrections (when applicable).

A2.19. Reference 19 Enter the total of references 16 and 18. If no corrections, leave blank.

A2.20. Reference 20 Enter the corrected CG in percent of MAC. If no corrections, leave blank.

A2.21. Reference 21 Enter ZFW and moment. (Adjust if corrections are made)

A2.22. Reference 22 Leave blank except for airdrop missions.

A2.23. Reference 23 Enter estimated landing fuel weight and moment. Check computerized flight plan or use 30,000 pounds for first hour of flight and 20,000 pounds per hour for remainder of flight.

A2.24. Reference 24 Enter the total of references 21 and 23. This weight should not exceed the allowable landing GW shown in the limitations block.

A2.25. Reference 25 Enter the estimated landing CG in percent of MAC.

A2.26. Remarks Block Enter nonstandard fuel sequence information, if applicable, the maneuver load limit (if less than 2.5g), and any aircraft structural weight restrictions.

A2.26.1. Nonstandard fuel sequencing will be used when maintenance problems preclude the use of certain fuel tanks. Nonstandard fuel procedures are essentially the same as standard fuel sequencing with the following exceptions:

A2.26.1.1. The flight engineer will inform or provide the loadmaster of the conditions requiring this configuration and the fuel weight distribution of individual tanks.

A2.26.1.2. Fuel weight moments will be computed using the standard sequence fuel moment tables in T.O. 1C-5A-5-2 and T.O. 1C-5A-5-2-1.

A2.26.1.3. Special zero fuel weight center of gravity (ZFWCG) restrictions are required when using nonstandard fuel sequencing. Enter ZFWCG limitation in the limitation block. (See T.O. 1C-5A-1, figure 5-7.).

A2.26.1.4. Weight limitation restriction. Depending on which tanks are empty, the takeoff and fuel allowable gross weight limitations will be restricted. The landing limitation will remain at 769,000 pounds. Comply with T.O. 1C-5A-1, section V, Nonstandard Fuel Sequence Procedures.

A2.26.1.5. Use the remarks block to record the fuel breakdown of symmetrical tanks, weight and moments, i.e., 1 and 4 main tanks 47,000 pounds @ 758 moments.

NOTE:

When calculating moments for fuel, use 14 moments for each 1,000 pounds of fuel over the standard fuel figures contained in T.O. 1C-5A-5-2.

A2.26.2. Maneuver load limitations apply.

A2.26.2.1. When ZFW does not exceed 590,000 pounds and takeoff GW does not exceed 769,000 pounds, no entry required.

A2.26.2.2. When ZFW is between 590,000 and 635,000 pounds or takeoff GW is greater than 769,000 pounds, enter "Maneuver load limit 2.25g."

A2.26.2.3. When ZFW is between 635,000 and 665,000 pounds, enter "maneuver load limit 2.0g."

A2.27. Load Adjuster Number Block. Leave blank.

A2.28. Signature Block Entries must be legible.

Attachment 3

C-5 AUTOMATED FORM F USERS GUIDE

A3.1 Introduction This attachment provides details for using the C-5 Automated Form F Version 4.0.2. (AFF) program. This program is a comprehensive weight and balance tool for C-5 loadmasters, and may be used instead of manually completing the DD Form 365-4, **Weight and Balance Clearance Form F-Transport/Tactical**. Each loadmaster is responsible for ensuring the data is accurate. If the accuracy of the computations is in doubt, the loadmaster will cross check with reference sources such as the T.O. 1C-5A-5-2, and **Chapter 3**. A printed copy of the AFF is acceptable in lieu of the DD Form 365-4. The AFF program also includes the following tools to assist the loadmaster: Vehicle Loading, Cargo, Tires/Tracks, Hazardous Materials, Load Planning, and Miscellaneous.

WARNING

Use of the AFF does not relieve the loadmaster of responsibility for determining safe weight and balance conditions.

A3.2. Main Form F View The Main Form F View gives a summary of the current Form F and provides a quick way to check for accuracy and completeness of the Form F prior to printing it. The different colors in the view titles indicate different levels of caution. Green indicates no warnings or cautions. Yellow indicates one or more potential problems with the Form F have been identified. To learn the cause of the "yellow" condition, check the auto-generated remarks section. Red indicates one or more operational limit(s) have been exceeded. To learn the cause of the "red" condition, check the "limits" dialog or the "remarks" dialog.

A3.3. Menu Commands The C-5 AFF uses the following menu organization:

A3.3.1. New Allows the user to create a new Form F at any time.

A3.3.1.1. Select Aircraft & Configuration Allows the user to pick the serial number, verify or enter/change the Basic Weight and Moment from the DD Form 365-3, **Chart C-Basic Weight and Balance Record** and select the configuration.

A3.3.1.1.1. Serial Number Select the 6-digit tail number of the aircraft. You may select "<Edit>" at the top of the list to view, add, or edit tail numbers with associated Basic Weight, Moment, Home Station, and restrictions for the aircraft.

A3.3.1.1.2. Basic Weight/Moment The Aircraft's basic weight and moment shall be verified with the current DD Form 365-3, **Chart C-Basic Weight and Balance Record**, onboard the aircraft. If the data does not match the DD Form 365-3, change the basic weight and moment by tapping the basic weight and moment boxes. The weight and moment input will become the new default for the given serial number.

A3.3.1.1.2.1. Enter Basic Weight and Moment

A3.3.1.1.2.1.1. Serial Number The previously selected serial number appears in this block and can only be changed by returning to the Select Aircraft and Configuration screen.

A3.3.1.1.2.1.2. Basic Weight Enter the aircraft's basic weight listed in the Chart C.

A3.3.1.1.2.1.3. Basic Moment Enter the aircraft's basic weight listed in the Chart C.

A3.3.1.1.2.1.4. Home Station Select the aircraft's home station from the drop down list or select <Edit> to add a new home station. The C-5 AFF Program "remembers" and automatically fills in the last used home station based on the aircraft serial number.

A3.3.1.1.2.1.5. Flight Restrictions Select aircraft's level of flight restriction from the drop down list, if applicable.

A3.3.1.1.3. Configuration Select CP-1, CP-2 or CP-3 for {A}{B} model or C-1, C-2 or C-3 for {S} model aircraft.

A3.3.1.1.4. Begin Form F Pressing this button starts the new Form F and takes the user to the main Form F view.

A3.3.2. Dialog Screens The user can select any of the ten icons across the bottom of the main screen which allows one-touch access to the ten main Form F screens. The program also allows navigation from screen to screen using the "Next" and "Previous" arrows provided on each Form F screen.

A3.3.2.1. Mission Dialog This dialog is used to enter items to the Form F that pertain to the given mission (To, From, and Pilot), as well as some items which pertain to the aircraft itself (Flight Restriction and Home Station).

A3.3.2.1.1. Date The current date set in the PDA is automatically entered as the default date. The date may be changed by selecting the calendar drop-down and making the appropriate selection.

A3.3.2.1.2. Mission Enter the mission number.

A3.3.2.1.3. Serial Number (SN) The serial number selected when starting the Form F should appear in the Serial Number box as the default. The aircraft serial number may be changed by selecting the Serial Number drop-down list and making the appropriate selection.

A3.3.2.1.3.1. Serial Number Database Selecting <edit> at the top of the Serial Number drop-down list provides access to the Serial Number Database screen. This screen may be used to update the list of Serial Numbers with the most current basic weight, basic moment, home station, and flight restrictions.

A3.3.2.1.3.1.1 Edit Select the serial number you wish to edit and then click this button.

A3.3.2.1.3.1.2. Delete To delete a particular serial number, select the serial number you wish to delete and click this button.

A3.3.2.1.3.1.3. Add Tap this button to add back into the database any serial number that was previously deleted. Only valid C-5 serial numbers will be accepted.

A3.3.2.1.3.1.4. Serial Number Display Grid The grid displays a list of serial numbers along with its associated weight, moment, home station, and flight restrictions (if applicable). The icon next to the serial number indicates the aircraft MDS.

A3.3.2.1.3.1.5. Close Tap this button to Close the SN dialog and return to the Mission Dialog.

A3.3.2.1.4. Config Select the aircraft configuration. The configuration is used to determine if passenger seating is available.

A3.3.2.1.5. Home Station Select the aircraft home station from the drop down list. The C-5 AFF Program "remembers" and automatically fills in the last used home station based on the aircraft serial number.

A3.3.2.1.6. Pilot Manually enter, or select a previously used pilot's name from the drop down list. The pilot's name will appear both in the header block of the Form F and in the signature block at the bottom of the page.

A3.3.2.1.7. Flight From Manually enter, or select the departure airfield from the drop down list. Select <edit> at the top of the drop-down list to enter a new airfield into the database.

A3.3.2.1.8. Flight To Manually enter, or select the destination airfield from the drop down list. Select <edit> at the top of the drop-down list to enter a new airfield into the database.

A3.3.2.1.9. Flight Restriction Enter or select the Flight restriction level or No for no flight restrictions. The selection made here will determine operating limits used throughout the Form F.

NOTE:

Flight restriction information and Home Station information are updated and retained in the serial number record for the aircraft and will appear on subsequent Form F's created for that serial number, until changed. They remain persistent for this aircraft until a subsequent change is made.

A3.3.2.2. Crew Dialog Enter the number of crew members in each compartment, including crew members seated in the troop compartment. If "Auto calculate" is checked, the weight and moment for each compartment will automatically be estimated by multiplying the number of crew members by the nominal lbs/person value. Optionally, you can uncheck the "Auto calculate" box and manually enter the crew weight and moment for each compartment.

A3.3.2.2.1. Flight Deck (FS 440) Select the number, weight, and moment of crew members seated in the forward flight deck.

A3.3.2.2.2. Aft Flight Deck (FS 730) Select the number, weight, and moment of crew members seated in the aft flight deck.

A3.3.2.2.3. Courier Compartment (FS 917) Select the number, weight, and moment of crew members seated in the Courier Compartment.

A3.3.2.2.4. Trp/LM Seats (FS 2031) Select the number, weight, and moment of crew members seated in the Loadmaster seats in the troop compartment.

A3.3.2.2.5. Trp/Row 14 (FS 1931) Select the number, weight, and moment of crew members seated in Row 14 in the troop compartment.

A3.3.2.2.6. Total Crew The combined number, weight, and moment for the entire crew are displayed here. These fields are always calculated by the software.

A3.3.2.2.7. Auto calculate using Check this box for the weights and moments to be automatically calculated using the average lbs/person weight specified.

A3.3.2.2.8. Crew Bags The Crew Bags button opens the Crew Bags Dialog which allows the user to select which items the crew will be carrying. Select items carried by the crew members To determine the average baggage weight per crew member. The user can manually enter the arm and weight for the crew bags by unchecking the "Auto-calculate" box,.

A3.3.2.3. Operating Weight Dialog This dialog displays a summary of the weights and moments data contributing to the Operating Weight. Selection of Steward, Emergency, and Extra Equipment is also done from this dialog by selecting the symbol adjacent to the appropriate weight entry box. The appropriate Equipment Selection list is opened for editing when this button is selected. Selecting the appropriate check-box adds the corresponding equipment weights and moments to the Form F. All weight and balance information for each item listed may be changed by selecting the appropriate box, typing in the new information, and pressing the Save as Default button.

A3.3.2.4. Fuel Dialog Use this screen to enter the Takeoff Fuel, Landing Fuel, Flight Duration, and Air-Refueling (AR) Fuel data. When the fuel calculation box is checked, the landing fuel is automatically estimated based on 30,000 lbs/hr for the first hour and 20,000 lbs/hr thereafter for the time entered in the hours drop-down. If the box is unchecked the user can enter the landing fuel data manually.

A3.3.2.4.1. Takeoff Fuel Weight Select this box to enter the takeoff fuel weight. When non-standard fuel configurations exist, this box will display the total weight of the fuel configuration.

A3.3.2.4.2. Takeoff Fuel Moment Select this box to enter the takeoff fuel moment. When non-standard fuel configurations exist, this box will display the total moment of the fuel configuration.

A3.3.2.4.3. Est. Land. Fuel Weight This box displays the estimated landing fuel weight based on fuel usage outlined in paragraph A2.3.2.4..

A3.3.2.4.4. Est. Land. Fuel Moment This box displays the estimated landing fuel moment based on fuel usage outlined in paragraph A2.3.2.4.

A3.3.2.4.4.1. Hours Manually enter or selected the flight time from the drop down list.

A3.3.2.4.4.2. AR Fuel Load Enter the Air Refueling fuel weight that is anticipated, if applicable.

A3.3.2.4.4.3. Non-Standard Fuel If any fuel tank is inoperable, check the "Non-Standard Fuel" checkbox to manually enter the takeoff fuel weight for each tank pair. When non-standard fuel is selected the Fuel Tanks dialog is opened for the user to enter the nonstandard fuel load. On return from the Fuel Tanks Dialog, a "Fuel Tanks" button is available to the user for subsequent changes to the non-standard fuel load.

A3.3.2.4.4.3.1. The user is alerted on the following conditions: minimum landing fuel of 18,000 lbs. not maintained and flight restrictions are in effect.

A3.3.2.4.4.3.2. De-selecting the "Non-Standard Fuel" checkbox will remove all non-standard fuel information previously entered, remove the "Fuel Tanks" Button, and re-adjust the fuel loaded to standard allocations within the tanks per T.O. 1C-5A-1.

A3.3.2.4.4.4. Non-Standard Fuel Tanks Dialog This screen is used only for Non-Standard fuel. If the user has entered a fuel weight on the Fuel Dialog screen, it will be used as an estimated fuel load. If no load is entered on the previous screen, the maximum allowable fuel load is assumed. When the user completes the non-standard loading, the weights are totaled and returned to the Fuel Dialog screen. The software will automatically update the weight limitations as per T.O. 1C-5A-1 and include the appropriate tank information in the remarks section of the Form F.

A3.3.2.4.4.4.1. To activate a tank the user checks the box next to the selected tank. The computer automatically enters the maximum available fuel weight for that tank (limited by the amount of fuel left to load from the estimated value), unchecking the selection will return the fuel from the tank into a 'fuel to load' status. The user can manually override any automatic weight entry by entering a new weight. Adjustments are automatically made to the remaining fuel to load and the amount of fuel loaded.

A3.3.2.4.4.4.2. To de-activate a tank, simply uncheck the box next to the fuel tank pair that is inoperable. The fuel will be removed from the tank and all fuel weight and moment values will be appropriately updated.

A3.3.2.4.4.4.3. Tank Check Box Check this box to select the tanks in use and causes fuel to be loaded into the tank. An appropriately labeled check box is provided for each tank set.

A3.3.2.4.4.4.4. Tank Weight This box displays the computer generated fuel weight and allows the user to override it to manually enter a fuel weight.

A3.3.2.4.4.4.5. Tank Moment This box displays the calculated fuel moment based on the entered or generated fuel weight for the tank.

A3.3.2.4.4.4.6. Total Weight This box displays the total weight of the fuel loaded at any given time.

A3.3.2.4.4.4.7. Total Moment This box displays the total moment of the fuel loaded at any given time.

A3.3.2.4.4.4.8. OK Press this button to update all fuel information for the Form F and return to the Fuel Dialog.

A3.3.2.4.4.4.9. Cancel Pressing this button returns the user to the Fuel Dialog.

NOTE:

A warning will appear when main tank weights are not loaded with a minimum 10,000 lbs. of fuel.

A3.3.2.5. Cargo Dialog The cargo dialog is used for entering cargo load information. The grid represents the cargo floor. "Arm" columns are provided on the left and right sides of the grid to represent the Fuselage Station (FS) markings on the cargo walls. In the two "Cargo" columns in the center, enter the weight for each item next to the corresponding arm entry.

A3.3.2.5.1. Rem. ACL (Remaining Allowable Cabin Load) This field continually updates as the user fills in each cargo unit. A positive number represents additional weight that can be added, negative numbers represents the amount of weight that needs to be removed to reach safe operational limits.

A3.3.2.5.2. Count Displays the number of cargo items represented by unit weights.

A3.3.2.5.3. Weight Displays the total cargo weight.

A3.3.2.5.4. Moment Displays the total cargo moment.

A3.3.2.5.5. Pre-fill pallet Arms Check this box to use the fixed pallet positions to load the pallets. Otherwise, uncheck the box and enter the arm values manually. Any of the pre-filled arms can be changed to more accurately represent the CG of the item. Only the lines that have weights associated with them will be printed on the Form F. For doing a partial pallet load, the

user can leave the "Pre-fill pallet Arms" box checked while filling in the palletized load, and then uncheck the box to finish entering the load items. (Only the Pre-filled arms that have no corresponding unit weight will be removed when you uncheck the box.)

A3.3.2.5.6. Show Line Detail This box can be checked to show line total weight and line total moment columns. A scroll bar will appear below the cargo grid allowing the user adjust the grid position to show these new columns.

A3.3.2.5.7. Clear All Removes all cargo items.

A3.3.2.6. PAX Dialog This dialog is used for entering the passenger count and average weight for the Troop compartment (FS 1675) and Courier compartment (FS 917).

A3.3.2.6.1. No. Pax Enter number of passengers sitting in the corresponding compartment.

A3.3.2.6.2. Lbs/PAX These boxes display the average weight per passenger sitting in the corresponding compartment. (Including carry-on baggage & gear). Tapping the Lbs/PAX box allows the user to select from a list of predetermined "Troop-plus-gear" weights or to manually enter an average passenger weight.

NOTE:

A warning will appear to remind the user to add two loadmasters to the crew count when any number of passengers is added to the Troop Compt and no crewmembers were previously entered in the Trp/LM seats in the crew dialog.

A3.3.2.7. Limits Dialog This dialog is used to display the comparison between weight and CG limitations and the actual weight and CG of the aircraft. Values exceeding limits are shown in red and values that are within limits are shown in green. By default, the limits are automatically determined using data from T.O. 1C-5A-1 and T.O. 1C-5A-5-2. However, users have the option to manually enter the weight limits, the CG limits, or both (as determined by the flight engineer) by unchecking the Calc Wt Limits button.

A3.3.2.7.1. EWP This box can be checked to use default weight limits for EWP (Emergency Wartime Planning) operations. A remark indicating that EWP limits are being used for limit calculations will automatically be generated.

A3.3.2.7.2. Calc Wt Limits This box can be checked to lock the weight limits section to the default values. Leaving this box unchecked allows the user to manually enter weight limits (as determined by the flight engineer). For normal flight conditions, leave this box checked.

A3.3.2.7.3. Calc CG Limits This box can be checked to lock the CG limits section to the default values. Unchecking the box will cause "Manual CG Limits Mode" to automatically be added to the remarks section of the Form F. For normal flight conditions, leave this box checked.

A3.3.2.8. Remarks Dialog This dialog is used to view the auto-generated remarks and/or enter additional remarks to be printed on the Form F. The following conditions will result in an auto-remark being generated:

A3.3.2.8.1. Weight or CG Limit Exceeded.

A3.3.2.8.2. Maneuver load limited to 2.25g or 2.0g.

A3.3.2.8.3. Manual CG Limits Mode (CG Limit calculation is turned off).

A3.3.2.8.4. EWP (Emergency Wartime Planning) Limitations.

A3.3.2.8.5. More than 20 people seated in the Flight Deck.

A3.3.2.8.6. Landing Fuel weight below 18,000 lbs.

A3.3.2.8.7. Non-Standard Fuel sequence.

A3.3.2.8.8. Flight Restriction status and limitations.

NOTE:

Additional Flight restriction information not shown in the remarks section is printed on the Form F to provide pertinent flight information to pilots and flight engineers.

A3.3.2.9. Signature Dialog This dialog is used to select or enter the "Computed By" signature and the "Weight and Balance Authority" signature.

A3.3.2.9.1. Computed By Manually enter, or select the name of the person responsible for completing the Form F from the drop down list. Manually entered names will automatically be saved in the database.

A3.3.2.9.2. Weight and Balance Authority Manually enter, or select the Weight and Balance Authority from the drop down list. Manually entered names will automatically be saved in the database.

A3.3.2.9.3. Pilot This box displays the name of the pilot. The user must return to the Mission Dialog to change the pilot's name.

A3.3.2.10. Print Dialog This dialog is used to print the Form F.

A3.3.2.10.1. Printing a Form F from the PocketPC requires an infrared-enabled printer such as the SiPix A-6, the Pentax PocketJet 200, or the HP Deskjet 340 (with infrared adaptor.) When the Form F is ready to print, tap the printer icon, check the printer settings, and then tap "Start Printing". The user must be sure to direct the Pocket PC's infrared port toward the printer at a distance of 6-30 inches.

A3.3.3. File Menu

A3.3.3.1. Edit Sub Menu The Edit Sub Menu allows the user to go directly to the nine dialog screens to modify the Form F.

A3.3.3.2. Save As Sub Menu The Save As Sub Menu allows the user to save a Form F to any desired name or location.

A3.3.3.2.1. Save As

A3.3.3.2.1.1. Name Enter the file name for the Form F File.

A3.3.3.2.1.2. Folder Allows the user to browse to the folder on the Pocket PC where the file will be saved.

A3.3.3.2.1.3 Type Should always be "C5 Form F files (*.C5)"

A3.3.3.2.1.4 Location Allows the user to select main memory or an alternate location such as a memory card.

A3.3.3.3. Import/Export Sub Menu The Import/Export Sub Menu allows the user to Transfer AFF configuration files between PocketPC devices using IR communications.

A3.3.3.3.1. Beam Addenda A Allows the user to send the current configuration file on their device to another user via the Infrared ports. The user receiving the file simply selects "Receive Configuration" (Rec Addenda A) on his device and the file is sent between the devices.

A3.3.3.3.2. Rec Addenda A Allows the user to tell their device to receive the configuration file that is being sent from another Pocket PC device. The user sending the configuration file should have already selected "Beam Addenda A.

A3.3.3.3.3. Cancel The cancel button allows the user to end the transmission and return to the previous location.

A3.3.3.4. Print Sub Menu The Print Sub Menu sends the user directly to the print dialog screen. See paragraph A.2.3.2.10. for printing instructions.

A3.3.4. Tools Menu The Tools Sub Menu provides access to a wide range of weight and balance tools to assist the Loadmaster in planning and verifying loads. All information entered into these tools will be saved with the Form F unless the "Clear All" button is selected before exiting.

A3.3.4.1. Vehicle Loading Sub Menu The Vehicle Loading sub menu provides access to tools which are pertinent to both the Load Planning, and Charts and Graphs sections of T.O. 1C-5A-9.

A3.3.4.1.1. Vehicle Projection This tool allows the user to determine if and how vehicles with a combination of: large height, wheelbase, and overhang dimensions may be loaded onto the aircraft without coming into contact with the cargo compartment side wall or ceiling.

A3.3.4.1.1.1. Ramp Select the desired ramp and kneel mode combination. Selecting the Drive-In check box allows the user to determine allowable clearances for driving vehicles with front-end projection into the aircraft. Note: The vehicle projection tool is automatically defaulted to the normal vehicle projection scenario of backing into the aircraft.

A3.3.4.1.1.2. Buttline Select the desired buttline.

A3.3.4.1.1.3. Height Enter the vehicle's height.

A3.3.4.1.1.4. Critical Dimension Enter the vehicle's critical dimension.

A3.3.4.1.1.5. Projection Enter the vehicle's aft, or forward (if Drive-In is selected) projection.

A3.3.4.1.1.6. Calc Tap this button to calculate the allowable vehicle projection limits and display the results in the dialog screen..

A3.3.4.1.1.7. Clear All Tap this button to clear all of the populated fields in the tool.

A3.3.4.1.1.8. Close Tap this button to close the tool and return to the Form F.

A3.3.4.1.2. Parking Overhang This tool allows the user to determine maximum permissible overhang at the forward and aft ramps with the ramps closed.

A3.3.4.1.2.1. Ramp Position Select forward or aft ramp from the drop down list. Selecting the "Fwd Facing" button allows the user to select the vehicle's orientation in reference to the forward or aft ramp.

A3.3.4.1.2.2. Front Dimensions/Rear Dimensions Either the Front Dimensions or Rear Dimensions area will be available depending upon the vehicle's orientation to the forward or aft ramp.

A3.3.4.1.2.2.1. Overhang Enter the vehicle's front or rear overhang.

A3.3.4.1.2.2. Gnd Clearance Enter the vehicle's ground clearance.

A3.3.4.1.2.3. Shoring This area allows the user to add in the height of any parking shoring that will be placed under a vehicle that will overhang the forward or aft ramp

A3.3.4.1.2.4. Desired FS This area allows the user to enter a desired fuselage station that the nearest axle to the overhang will be parked.

A3.3.4.1.2.5. Calc Tap this button to calculate the closest allowable fuselage station to park the nearest vehicle axle to the overhang and calculate shoring, if required.

A3.3.4.1.2.6. Clear All Tap this button to clear all of the populated fields in the tool.

A3.3.4.1.2.7. Close Tap this button to close the tool and return to the Form F.

A3.3.4.1.3. Ramp Crest Clearance Determines if a vehicle can be safely on/offloaded without contacting the ramp hinge areas of the forward and aft ramps while configured in the drive-in position.

A3.4.1.3.1. Ramp Position Select desired ramp position and kneeling configuration.

A3.4.1.3.2. Use Non Midpoint Select this box to determine effective ground clearance for points other than mid-point.

A3.4.1.3.3. Clearance

A3.4.1.3.3.1. Mid Pt Clear Enter the vehicle's mid-point ground clearance.

A3.4.1.3.3.2. Critical Dim Enter the vehicle's critical dimension.

A3.4.1.3.4. Min Clearance This area is only used to determine effective ground clearance for points other than mid-point and is accessed by selecting the "Use Non Mid-point" box.

A3.4.1.3.4.1. Min Clear Enter the ground clearance at the lowest point closest to the mid-point.

A3.4.1.3.4.2. Nr Axle Dist Enter the horizontal distance to the nearest axle.

A3.4.1.3.5. Calc Tap this button to calculate ramp crest clearance limits and calculate shoring if required.

A3.4.1.3.6. Clear All Tap this button to clear all of the populated fields in the tool.

A3.4.1.3.7. Close Tap this button to close the tool and return to the Form F.

A3.4.1.4. Ramp Contact Clearance Determines if vehicles can be safely on/offloaded with the airplane configured for drive in loading without contacting or dragging any part of the vehicle on the ground or ramp.

A3.4.1.4.1. Ramp Position Select the desired ramp position and kneeling configuration.

A3.4.1.4.2. Drive-In This tool is defaulted for backing vehicles into the aircraft. Select the "Drive-In" button if the vehicle will be driven in to the forward or aft end of the aircraft

A3.4.1.4.3. Critical Dimension Enter the vehicle's critical dimension.

A3.4.1.4.4. Front Dimensions/Rear Dimensions Enter the overhang and ground clearance for both the front and rear ends of the vehicle.

A3.4.1.4.5. Calc Tap this button to calculate ramp and/or ground contact clearances and shoring requirements, if applicable.

A3.4.1.4.6. Clear All Tap this button to clear all of the populated fields in the tool.

A3.4.1.5. Vehicle CG Calculation This tool provides a means to determine the Center of Gravity from Front End (CGFE), and the Center of Gravity from Front Axle (CGFA) of multiple axle vehicles.

A3.4.1.5.1. Axles Select the applicable number of axles from the drop down list.

A3.4.1.5.2. Front Overhang Enter the distance between the forward most point of the vehicle and the front axle.

A3.4.1.5.3. L1-L9 Enter the distance between axle #1 (front axle) and axle #2. This measurement will be L1. Enter each distance from axle #1 to the next subsequent axle (L2-L9) in the spaces provided.

A3.4.1.5.4. W1-W10 Enter the weights of axle #1 (front axle, W1) and each subsequent axle (W2-W10) in the spaces provided.

A3.4.1.5.5. Calc Tap this button to calculate the CGFA and CGFE of the vehicle.

A3.4.1.5.6. Clear All Tap this button to clear all of the populated fields in the tool.

A3.4.1.5.7. Close Tap this button to close the tool and return to the Form F.

A3.4.1.6. Vehicle Profile This tool allows the user to enter and save all weight and dimensional data for any given vehicle. Saved vehicle data can be imported to any vehicle loading tool within the AFF program by selecting the vehicle icon.

A3.4.1.6.1. Max Height Enter the vehicle's maximum height.

A3.4.1.6.2. Axles Pressing the "Axles" button will take the user to the "Vehicle Axles" page. See paragraph A2.4.2.5. for instructions on entering lengths and axle weights.

A3.4.1.6.3. Front Dimensions Enter the vehicle's front overhang, ground clearance, and projection.

A3.4.1.6.4. Rear Dimensions Enter the vehicle's front overhang, ground clearance, and projection.

A3.4.1.6.5. Clearance Enter the vehicle's midpoint ground clearance and critical dimension.

A3.4.1.6.6. Min Clearance Enter the ground clearance at the lowest point closest to the midpoint.

A3.4.1.6.7. Nr Axle Dist Enter the horizontal distance to the nearest axle.

A3.4.1.6.8. Name Assign a name for the vehicle data entered.

A3.4.1.6.9. OK Tap this button to save all data entered and return to the vehicle profile screen.

A3.4.2. Cargo Sub Menu The Cargo sub menu provides access to tools which are pertinent to both the Load Planning, and Charts and Graphs sections of T.O. 1C-5A-9.

A3.4.2.1. Load Shift This tool allows the user to calculate the distance that a predetermined amount of weight needs to be moved, or the required amount of weight that needs to be moved a predetermined distance, in order to achieve a desired aircraft zero fuel percent of MAC.

A3.4.2.1.1. Aircraft Gross Weight The aircraft zero fuel weight from the “Critical Values” section of the Form F that is currently open, or in the case that no Form F is currently open; the last Form F used will automatically be displayed. The user may change this value at any time.

A3.4.2.1.2. Current Aircraft CG The current aircraft zero fuel percent of MAC from the “CG Limits” section of the Form F that is currently open, or in the case that no Form F is currently open; the last Form F used will be displayed. The user may change this value at any time.

A3.4.2.1.3. Desired Aircraft CG Enter the desired aircraft zero fuel percent of MAC.

A3.4.2.1.4. Load shift weight If calculating load shift distance, enter the desired amount of cargo weight to be shifted.

A3.4.2.1.5. Load shift distance If calculating load shift weight, enter the desired load shift distance.

A3.4.2.1.6. Calc Tap the “Calc” button that corresponds to either the “Load shift weight” or the “Load shift distance” buttons to display the calculated value that is being solved for. Note: A load shift distance value must exist in the “Load shift distance” field in order to solve for load shift weight, and a load shift weight value must exist in the “Load shift weight” field in order to solve for load shift distance.

A3.4.2.1.7. Clear All Tap this button to clear all of the populated fields in the tool.

A3.4.2.1.8. Close Tap this button to close the tool and return to the Form F.

A3.4.2.2. Lateral CG This tool provides a means for the user to determine the proper lateral positioning of cargo within the lateral loading limits of the airplane cargo floor, and forward and aft ramp floors. Note: This tool only applies to cargo weights located within a 40 inch length of the cargo floor or a 20 inch length of the forward or aft ramp from each other.

A3.4.2.2.1. Cargo FS Enter the fuselage station where the cargo weights will be placed.

A3.4.2.2.2. Cargo Weight Enter each cargo weight in the appropriate left or right side column.

A3.4.2.2.3. Cargo Type Choose the appropriate cargo type i.e., axle or pallet for each side by side weight.

A3.4.2.2.4. Cargo Butt Line (BL) Enter the butt line that corresponds to the center of each cargo weight in the appropriate left or right side column. Note: Pallets are automatically defaulted to BL 61, but may be changed for pallets loaded outside of the logistics rails.

A3.4.2.2.5. Calc Tap this button to calculate the actual lateral CG and the lateral CG limit of the combined weights in the Actual Lateral CG and Lateral CG Limits boxes. An advisory will be displayed in the dialog screen to notify the user whether or not the actual lateral CG is within limits.

A3.4.2.2.6. Clear All Tap this button to clear all of the populated fields in the tool.

A3.4.2.2.7. Close Tap this button to close the tool and return the user to the Form F.

A3.4.2.3. Con. Cargo/Rest. Area This tool is used to determine maximum allowable floor loads for concentrated cargo located either on the cargo/ramp floors or over restricted areas and calculation of shoring when required.

A3.4.2.3.1. Actual Contact Load Enter the actual load supported by the contact.

A3.4.2.3.2. Floor Location Select the appropriate portion of the cargo or ramp floor where the contact will be placed.

A3.4.2.3.3. Contact Footprint Enter the contact footprint width and length in the corresponding boxes.

A3.4.2.3.4. Discontinuity Select the appropriate discontinuity, if any, that the contact will be placed on.

A3.4.2.3.5. Calc Tap this button to calculate the maximum allowable load and the dimensions of any required shoring.

A3.4.2.4. Cargo Side Clearance This tool is used to determine the allowable height of cargo over 114 inches for any given width of cargo.

A3.4.2.4.1. LHS and RHS Cargo Enter the width and height of left and right side cargo, and thickness of any shoring used in the appropriate blocks.

A3.4.2.4.2. max LHS BL and max RHS BL The tool will automatically compute the maximum left hand and right hand buttline that the outboard edge of the cargo can be placed on when cargo heights and widths are entered in the LHS and RHS Cargo fields.

A3.4.2.4.3. Calc Tap this button to display in the dialog screen whether or not side to side cargo clearance is sufficient.

A3.4.2.4.4. Clear All Tap this button to clear all of the populated fields in the tool.

A3.4.2.4.5. Close Tap this button to close the tool and returns to the Form F.

A3.4.2.5. Roller Load This tool is used to determine maximum allowable roller conveyor flight loads and calculates shoring when required. (See T.O. 1C-5A-9 for the exact procedures for determining maximum roller conveyor loads and shoring.)

A3.4.2.5.1. Net Wt Enter the net weight of cargo resting on the pallet.

A3.4.2.5.2. No. Skids Enter the number of skids or points contacting the surface of the pallet. For cargo resting on a flat surface (no skids), enter 1 in this field.

A3.4.2.5.3. Skids Longitudinal Length (L1) Enter the longitudinal length of the shortest contact or skid. (Refer to T.O. 1C-5A-9 Figure 4-23 for illustrations of this dimension).

A3.4.2.5.4. Number of conveyors under each skid Enter the number of roller conveyors covered by the shortest contact or skid.

A3.4.2.5.5. Lateral distance between skids (L2) If applicable, select the check-box and enter the shortest lateral distance between the centers of two adjacent longitudinal skids.

A3.4.2.5.6. Check if any skid cg is in Zone A Select the check-box if the center of any skid is inside of Zone A. (Refer to T.O. 1C-5A-9 Chapter 4, Section II for illustrations of this dimension).

A3.4.2.5.7. Check if skid overhangs the pallet Select the check-box if any skid overhangs the surface of the pallet.

A3.4.2.5.8. Calc Tap this button to calculate the allowable load per skid and the dimensions of any required shoring.

A3.4.3. Tires/Track Sub Menu This sub menu provides access to tools which are pertinent to both the Load Planning, and Charts and Graphs sections of T.O. 1C-5A-9.

A3.4.3.1. Pneumatic Tire This tool is used to determine limitations and shoring requirements for vehicles with pneumatic tires. (See T.O. 1C-5A-9 Chapter 4, Section II for more information on pneumatic tire limitations).

A3.4.3.1.1. Select Tire Type Select the type of tire from the drop-down list. If the tire is not in the list, choose "Other" and then supply the 'M' factor for the tire.

A3.4.3.1.2. Select Location Select the applicable tire location i.e., cargo floor, ramp floor, cargo floor over ring pan, or ramp floor over ring pan.

A3.4.3.1.3. Load Enter amount of weight applied and the number of tires over which the weight is distributed. For example if you have an applied load of 10,000 lbs on an axle, you should either enter 10,000 lbs per "2-Tire Axle" OR you could enter 5,000 lbs per "Tire". Since the allowable load is always calculated per tire, the weight will be evenly divided by the number of tires you select. (Note: 10,000 lbs per "2- Tire axle" will produce the same results as 5,000 lbs per Tire.)

A3.4.3.1.4. Tire Footprint Enter the length and width of the tire footprint, and the spacing between the treads.

A3.4.3.1.5. Calc Tap this button to calculate the allowable load and shoring requirements for pneumatic tires.

A3.4.3.1.6. Clear All Tap this button to clear all information entered into the tool.

A3.4.3.1.7. Close Tap this button to close the tool and return to the Form F.

A3.4.3.2. Steel/Hard Rubber Tire This tool is used to determine hard rubber or steel wheel (No Measurable Length) maximum allowable floor loads and calculate shoring when required. (See T.O. 1C-5A-9 Chapter 4, Section II for more information on steel wheels and hard rubber tires.)

A3.4.3.2.1. Type of Tire Select "Steel", or "Hard Rubber".

A3.4.3.2.2. Parked On Select "Cargo Floor" or "Ramp Floor".

A3.4.3.2.3. Tire's Applied Weight Enter the weight of the steel wheel or hard rubber tire.

A3.4.3.2.4. Tire Width Enter the width of the tire. Length is assumed to be zero.

A3.4.3.2.5. Discontinuity If the tire is parked over a discontinuity, select the type of discontinuity from the drop down list. If the discontinuity is not listed, select "Other width" and then enter the width of the discontinuity.

A3.4.3.2.6. Calc Tap this button to calculate the allowable load and dimensions of any required shoring.

A3.4.3.2.7. Close Tap this button to close the tool and return to the Form F.

A3.4.3.3. Track Pad This tool is used to determine maximum allowable floor loads for vehicles with tracked pads and calculate shoring when required. (See T.O. 1C-5A-9 Chapter 4, Section II for more information on loading vehicles with track pads.)

A3.4.3.3.1. Parked on Select “Cargo Floor” or “Ramp Floor”.

A3.4.3.3.2. Track total contact length Enter the length of the section of track contacting the ground.

A3.4.3.3.3. Track pad’s weight Enter the applied weight of one track pad. This is calculated by dividing the weight of the vehicle by the number of weight-supporting wheels. For example, if a tracked vehicle weighs 90,000 lbs and has 8 weight-supporting axles (16 wheels) divide 90,000 by 16 to get a track pad load of 5,625 lbs.

A3.4.3.3.4. Track pad’s length Enter the length of a single track pad.

A3.4.3.3.5. Track pad’s width Enter the width of a single track pad.

A3.4.3.3.6. Track pad’s ‘M’ factor Enter the track pad's 'M' factor. (See T.O. 1C-5A-9 Chapter 4, Section II for more information on determining a track pad's 'M' factor.)

A3.4.3.3.7. Calc Tap this button to calculate the track pad's allowable load and the dimensions of any required shoring.

A3.4.3.4. Rolling Shoring This tool is used to determine on/off loading maximum allowable loads and calculate rolling shoring when required. (See T.O. 1C-5A-9 Chapter 4, Section II for more information on calculating rolling shoring.)

A3.4.3.4.1. Cargo Select “Steel wheel”, “Hard rubber wheel”, “Pneumatic tire”, or “Track pad”.

A3.4.3.4.2. Contact weight Enter the applied weight per contact.

A3.4.3.4.3. Contact Length Enter the length of the contact.

A3.4.3.4.4. Contact M-Factor Enter the contact’s M-factor. If the contact is flat, the M-factor will be 1.

A3.4.3.4.5. Contact tread spacing Enter the distance between treads (pneumatic tires only).

A3.4.3.4.6. Calc Tap this button to calculate the allowable load and the dimensions of any required shoring.

A3.4.4. Hazardous Materials Sub Menu This sub menu provides access to tools which are pertinent to the loading of hazardous materials and explosives as contained in AFMAN 24-204(I), **Preparing Hazardous Materials For Military Shipments**.

A3.4.4.1. Segregation 18.1 The Segregation dialog allows the user to select any and all types of hazardous materials to be loaded on the aircraft. Immediate feedback is provided when non-compatible materials are loaded together and segregation is required. Detailed feedback in the form of actual AFMAN 24-204(I) notations is given in the Hazardous Segregation Detail screen. The user exits this screen by way of the OK button on the top of the Pocket PC screen.

A3.4.4.1.1. Materials Selection Checkboxes Each hazardous type has its own selection checkbox. The user selects or deselects the types to be loaded through these checkboxes.

A3.4.4.1.2. Details When the user selects this button, the detailed notations from AFMAN 24-204(I) are displayed on the Segregation Detail screen. The list is scrollable enabling the user to

view all messages. There are no user input or selection items on this screen. The user exits the screen by way of the OK button on the top of the Pocket PC screen.

A3.4.4.1.3. Clear All Tap this button to clear all information entered into the tool.

A3.4.4.2. Explosives Compatibility 18.2 The Explosives Loading dialog allows the user to select any and all types of explosives materials to be loaded on the aircraft. Immediate feedback is provided when non-compatible materials are loaded together. Detailed feedback in the form of actual AFMAN 24-204(I) notations is given in the Explosives Compatibility Detail screen. The user exits this screen by way of the OK button on the top of the Pocket PC screen.

A3.4.4.2.1. Details When the user selects this button, the detailed notations from AFMAN 24-204(I) are displayed on the Segregation Detail screen. The list is scrollable enabling the user to view all messages. There are no user input or selection items on this screen. The user exits the screen by way of the OK button on the top of the Pocket PC screen.

A3.4.4.2.2. Explosives Compatibility Notes The Explosives Compatibility Notes screen provides a list of all notations that are applicable under the current load conditions (selected explosives materials loaded). The list is scrollable enabling the user to view all messages. There are no user input or selection items on this screen. The user exits the screen by way of the OK button on the top of the Pocket PC screen.

A3.4.4.2.3. Clear All Tap this button to clear all information entered into the tool.

A3.4.5. Load Planning Sub Menu The Load Planning Sub Menu of the Tools menu offers tools which assist the Loadmaster in proper placement of load items.

A3.4.5.1. %MAC/ARM Conversion This tool is used to calculate between Arm and % MAC.

A3.4.5.1.1. % MAC If solving for Arm, enter the % MAC. For example, to find the Arm for 32.6%, enter 32.6 in the box.

A3.4.5.1.2. Arm If solving for % MAC, enter the Arm. For example, to find the % MAC for an Arm of 1388, enter 1388 in the box.

A3.4.5.1.3. "<=>" Button When the desired fields are entered, tap the "<=>" button. This will convert the known value to its corresponding value.

A3.4.5.1.4. Close Tap this button to close the tool and return to the Form F.

A3.4.5.2. DLM & DLS Calculator This tool is used to determine cargo load placement and the moments generated, given a desired aircraft center of gravity.

NOTE:

By default, if a Form F file is open when selecting this tool, it populates the fields with the information found in the Form F. To enter information other than what is contained in the currently open Form F, select "Clear All" before entering the desired information.

A3.4.5.2.1. Desired ZF %MAC Enter the target Zero Fuel % MAC you wish to achieve.

A3.4.5.2.2. Operating Weight Enter the operating weight of the aircraft.

A3.4.5.2.3. Operating Moment Enter the operating moment of the aircraft.

A3.4.5.2.4. Number of Passengers Enter the total number of passengers.

A3.4.5.2.5. Weight of PAX (Incl. Bags) Enter the weight per passenger. Note: 'Carry-on' baggage should be included in this field. Baggage on a pallet in the cargo compartment should be entered as part of the cargo weight.

A3.4.5.2.6. Cargo Weight Enter the total cargo weight.

A3.4.5.2.7. Calc Tap this button to calculate the DLM and DLS.

A3.4.5.2.7.1. DLM. (Desired Load Moments) Once computed, the value shown is the moments that would be generated if the entire cargo load was centered at the DLS.

A3.4.5.2.7.2. DLS. (Desired Load Station) Once computed, the value shown is the Fuselage Station at which the entire cargo load is centered in the aircraft.

A3.4.5.2.7.3. Zero Fuel Weight Once computed, the value shown is the entire weight of the aircraft minus fuel weights.

A3.4.5.2.7.4. Zero Fuel Moment Once computed, the value shown in this box are the moments generated for the aircraft minus fuel moments.

A3.4.5.2.8. Clear All Tap this button to clear all information entered into the tool.

A3.4.5.2.9. Close Tap this button to close the tool and return to the Form F.

A3.4.5.3. Cable Pull This tool is used to determine the effects of friction on a winching operation and the proper winch configuration to minimize those effects. (See T.O. 1C-5A-9 Chapter 4, Section IV for more information on Cable Pull.)

A3.4.4.3.1. Cargo Weight Enter the weight of the cargo to be winched.

A3.4.4.3.2. Select Configuration Use this drop down list to choose the aircraft kneel mode and ramp to be used. There are also options for choosing either winching on a level surface or using an angle not already pre-determined.

A3.4.4.3.3. Rolling/Sliding on Choose the type of surface (friction coefficient) the cargo will be winched on from the drop down list. There is also an option for choosing "other surface", which is a surface that does not have a pre-determined friction coefficient.

A3.4.4.3.4. Select winch type Choose the type of winch to be used from the drop down list. The tool will use the pull capacity of the chosen winch to calculate the winch line configuration.

A3.4.4.3.5. Calc Tap this button to compute the cable pull and actual weight being winched.

A3.4.4.3.6. Lbs. Field Displays the actual force in pounds being exerted on the winch.

A3.4.4.3.7. Results Displays the required cable configuration. (See T.O. 1C-5A-9 Chapter 4, Section IV for cable configuration illustrations)

A3.4.5.4. Cargo Restraints This tool is used to calculate the required restraint values for items of cargo, number and type of tiedown needed to meet restraint requirements and the actual restraint value of tiedown already applied to a load. Users make entries for each restraint device (or pair of restraint devices) until all restraint requirements are met.

A3.4.5.4.1. Weight Enter the weight of the item to be restrained. Restraint requirements are automatically updated.

A3.4.5.4.2. Device Select the restraint value that corresponds to the type of device being used (10,000 lbs or 25,000 lbs).

A3.4.5.4.3 Estimated Devices Required This area displays the estimated number of tiedowns required for the given cargo item weight and type of device to be used. Estimates are figured using an optimum 30 degree tiedown angle which provides 7500 pounds of longitudinal restraint for MB-1 chains and devices, and 18,750 pounds of longitudinal restraint for MB-2 chains and devices.

A3.4.5.4.4. Required Restraint This section displays the cumulative restraint received in each direction from the devices in the list. As the supplied restraint meets/exceeds the restraint requirements, the heading for the restraint turns Green.

A3.4.5.4.5. Actual Restraint from Devices This area displays the actual restraint that has been applied for each direction.

A3.4.5.4.6. Applied Restraint List This area lists each applied tiedown's ID, strength, overall length, effective horizontal length, effective lateral length, and effective vertical length.

A3.4.5.4.7. Add/Edit Restraint Device The Add/Edit Restraint Device screen allows the user to add restraints to a cargo object on the Cargo Restraints Screen.

A3.4.5.4.7.1. Tiedown Device Select capacity of tiedown device being used (25,000 lb, 10,000 lb, or 5,000 lb).

A3.4.5.4.7.2. Tiedown Ring Select capacity of the tiedown ring being used (25,000 lb for cargo floor tiedown ring, or 7,500 lb for pallet ring).

A3.4.5.4.7.3. Chain Length Enter the actual tiedown length.

A3.4.5.4.7.4. Direction from ring Select the appropriate tiedown direction.

A3.4.5.4.7.5. Effective Length Enter the effective length of tiedown for each given direction. (See T.O. 1C-5A-9 Chapter 4 Section III for instructions on measuring effective length of tiedown).

NOTE:

The overall chain length is compared to a calculated chain length based on a three dimensional distance vector using the effective lengths shown. If there is a discrepancy, the user is alerted to the fact that the chain is either shorter or longer than expected.

A3.4.5.4.7.6. Clear Tap this button to clear all information entered into the tool.

A3.4.5.4.7.7. OK Tap this button to add results and return to the Cargo Restraints Screen.

A3.4.5.4.8. Delete Tap this button to deletes any highlighted tiedown in the Applied Restraint List.

A3.4.5.4.9. Clear All Tap this button to clear all information entered into the tool.

A3.4.6. Miscellaneous Sub Menu This sub menu of the tools menu provides access to tools which are not part of the normal Loadmaster activities, such as a temperature conversion utility.

A3.4.6.1. Conversions

A3.4.6.1.1. Temperature Conversion This tool is used to convert between Celsius/Fahrenheit.

A3.4.6.1.1.1 Fahrenheit If you are solving for Celsius, enter the temperature in Fahrenheit.

A3.4.6.1.1.2 Celsius If you are solving for Fahrenheit, enter the temperature in Celsius.

A3.4.6.1.1.3 "<=>" Button Tap this button to convert the known value to its corresponding value.

A3.4.6.1.2. Measurements This tool is used to convert measurements between English and Metric.

A3.4.6.1.2.1. Meters to Feet

A3.4.6.1.2.2. Kilograms to Pounds

A3.4.6.1.2.3. Liters to Gallons

A3.4.6.1.2.4. PSI to KPH (Kilo Pascal)

A3.4.6.1.3. Formulas Displays the formulas used to calculate all items in the conversions tool.

A3.4.6.1.4. Close Tap this button to close the tool and return to the Form F.

A3.4.7. PSI Calculator This tool is used to calculate PSI for several different contact configurations.

A3.4.7.1. Calculate PSI For Select the type of contact that will be resting on the cargo floor from the drop down list. The drop down list consists of the following choices:

A3.4.7.1.1. Box, flat bottom

A3.4.7.1.1.1. Unit Weight Enter the weight of the box.

A3.4.7.1.1.2. Length Enter the length of the box.

A3.4.7.1.1.3. Width Enter the width of the box.

A3.4.7.1.2. Box, with skids

A3.4.7.1.2.1. Unit Weight Enter the weight of the box.

A3.4.7.1.2.2. Length of skid Enter the length of the skid.

A3.4.7.1.2.3. Width of skid Enter the width of the skid.

A3.4.7.1.2.4. Number of skids Enter the number of skids supporting the box.

A3.4.7.1.3. Drum, flat bottom

A3.4.7.1.3.1. Unit Weight Enter the weight of the drum.

A3.4.7.1.3.2. Drum diameter Enter the diameter of the drum.

A3.4.7.1.4. Drum, with a rim

A3.4.7.1.4.1. Unit weight Enter the weight of the drum.

A3.4.7.1.4.2. Rim outside diameter Enter the rim's outside diameter.

A3.4.7.1.4.3. Rim inside diameter Enter the rim's inside diameter.

A3.4.7.1.5. Triangular base

A3.4.7.1.5.1. Unit weight Enter the weight of the item.

A3.4.7.1.5.2. Height Enter the height of one side of the base.

A3.4.7.1.5.3. Length of base Enter the length of one side of the base.

A3.4.7.1.6. Pneumatic Tire

A3.4.7.1.6.1. Tire's weight Enter the weight of the tire.

A3.4.7.1.6.2. Pad Length Enter the length of the tire's footprint.

A3.4.7.1.6.3. Pad Width Enter the width of the tire's footprint.

A3.4.7.1.6.4. Tire's 'M' Factor Enter the tire's 'M' factor. (See T.O. 1C-5A-9, Chapter 4, Section II for a list of pneumatic tire 'M' factors.)

A3.4.7.2. Calc Tap this button to calculate the PSI for the given contact.

A3.4.7.3. Clear All Tap this button to clear all information entered into the tool.

A3.4.7.4. Close Tap this button to close the tool and return to the Form F.

A3.4.8. Ramp Angle This tool can be used to determine non-standard ramp configuration angles or to obtain a more precise angle than what is listed in T.O. 1C-5A-9 Chapter 4, Section II for a given ramp configuration.

A3.4.8.1. Ramp Height Enter the height of the ramp measured from the ground to the top of the ramp hinge.

A3.4.8.2. Ramp Length Enter the length of the ramp measured from the ground to the top of the ramp hinge.

A3.4.8.3. Calc Tap this button to calculate the ramp angle.

A3.4.8.4. Clear All Tap this button to clear all information entered in to the tool.

A3.4.8.5. Close Tap this button to close the tool and return to the Form F.

A3.5. Help Menu The Help menu offers the following commands, which provide assistance with this application:

A3.5.1. Contents Provides an index to the available help topics.

A3.5.2. About Displays the version number of this application.

A3.6. Exit Tapping this button closes the AFF tool and returns the user to the Pocket PC desktop.

A3.6. Accuracy of the C-5 AFF The following paragraph has been taken directly from T.O. 1-1B-50. Para 9-8. ACCURACY. The accuracy of the balancing computer shall be such that CG locations determined by the balancing computer shall not vary from the CG locations by more than 1/10 of 1 percent of the MAC of the airplane to which the balancing computer applies. Weights, arms and simplified moments shall be displayed to the nearest whole number; however, the computer program shall be more accurate. This may result in the displayed values not agreeing mathematically but will meet the required accuracy. For example, if the weight is 5.6 and the arm is 278.6 and the moment is to be displayed as moment/100 then the actual moment is 15.6016. The computer will display the weight as 6, the arm as 279 and the moment as 16. The apparent result appears incorrect since 6 x 279 should yield a moment of 16.7. The actual internal result however, will be mathematically correct and the apparent percentage of

inconsistency as displayed will normally not be this large since, unlike the example, many inputs will be in thousands of pounds not tens of pounds.

A3.7. Drop-down Lists Drop-down Lists in C-5 AFF allow the user to select previously used data without having to re-type.

A3.7.1. For example, the "Pilot" drop-down list automatically remembers the pilot name you type in. The next time a Form F is created, the user can select from any of the pilot names previously typed. Additionally, the C-5 AFF allows the user to add, remove, or edit any items in the drop list by selecting <Edit> at the bottom of the list.

A3.7.2. C-5 AFF contains the following Drop Lists:

A3.7.2.1. Serial Number - Mission Dialog

A3.7.2.2. Home Station - Mission Dialog

A3.7.2.3. Pilot - Mission Dialog

A3.7.2.4. To - Mission Dialog

A3.7.2.5. From - Mission Dialog

A3.7.2.6. Flight Restrictions - Mission Dialog, Serial Edit Dialog

A3.7.2.7. Computed By - Signatures Dialog

A3.7.2.8. Weight and Balance Authority - Signatures